



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,251	06/25/2002	Guangzhi Li	2001-0337	8434

26652 7590 03/06/2007
AT&T CORP.
ROOM 2A207
ONE AT&T WAY
BEDMINSTER, NJ 07921

EXAMINER

MERED, HABTE

ART UNIT	PAPER NUMBER
----------	--------------

2616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/064,251

Applicant(s)

LI ET AL.

Examiner

Habte Mered

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The amendment filed on 12/15/2006 has been entered and fully considered.
2. Claims 1-20 are pending. Claims 1, 6, and 10 are the base independent claims.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. **Claims 1 and 18** are rejected under 35 U.S.C. 102(e) as being anticipated by Chaudhuri et al (US 7, 039, 009 B2), hereinafter referred to as Chaudhuri.

Chaudhuri teaches a method for lightpath restoration in a reconfigurable optical network using label switched path request.

2. Regarding **claim 1**, Chaudhuri discloses a method for signaling in a mesh telecommunication network (**See Figure 3, Column 17:60-67, and Column 18:1-15**) comprising the steps of: (i) receiving a request to establish a label switched path through the mesh network (**See Column 3:40-50, Column 10:39-60, Column 11:21-30, Column 2:29, Column 8:52-55, Column 16:8,17 and Column 6:20-30**); (ii) computing a service path and a restoration path (**Column 13:7-25**); (iii) sending a label switched path request along the restoration path requesting reservation of shared resources along the restoration path without allocating the shared resources (**Column 18:12-21**) and wherein the label switched path request includes service path information. (**Column 12:50-67 to Column 13:1-5**)

3. Regarding **claim 18**, Chaudhuri discloses a method further comprising: allocating the shared resources along the restoration path responsive to a detected failure in the mesh network. **(Column 19:10-40)**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-5 and 16-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen (US Pub. No. 2001/0032271 A1) in view of Lu et al (US Pub. No. 2002/0191247 A1), hereinafter referred to as Lu.

Allen teaches a method for ensuring path diversity across a communication network.

2. Regarding **claim 1**, Allen discloses a method for signaling in a mesh telecommunication network **(See Figure 1)** comprising the steps of: (i) receiving a request to establish a label switched path through the mesh network **(See Paragraph 25)**; (ii) computing a service path and a restoration path **(See Paragraph 24)**; (iii) sending a label switched path request along the restoration path and wherein the label switched path request includes service path information. **(See Paragraph 30 and 38)**

Allen fails to teach requesting reservation of shared resources along the restoration path without allocating the shared resources.

Lu teaches methods of fast restoration in an optical mesh network.

Lu discloses requesting reservation of shared resources along the restoration path without allocating the shared resources. **(Clearly in paragraph 104 Lu teaches prior to establishing the restoration path right after a failure is detected the bandwidth on the restoration can initially be reserved.)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Lu's method to incorporate a method of requesting reservation of shared resources along the restoration path without allocating the shared resources. The motivation to request reservation of shared resources along the restoration path without allocating the shared resources to raise awareness by other requesters that the bandwidth will be used shortly as stated in Lu's paragraph 104.

2. Regarding **claim 2**, Allen discloses a method wherein the service path information comprises a list of link used along the service path. **(See paragraphs 26 and 28)**

3. Regarding **claim 3**, Allen discloses wherein the service path information comprises a list of shared risk link groups traversed by the service path. **(See paragraphs 31 and 38)**

3. Regarding **claim 4**, Allen discloses a method wherein the label switched path request is an RSVP PATH message. **(See paragraph 25)**

4. Regarding **Claim 5**, Allen discloses a method wherein the mesh network is an optical network. **(See paragraph 8)**

5. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Allen in view of Lu as applied to claim 1 above, and further in view of Graves et al (US 6, 741, 572), hereinafter referred to as Graves.

Graves discloses architectures for communication networks.

The combination of Allen and Lu discloses the existence of shared resources along the restoration path as indicated in the rejection of claim 1.

The combination of Allen and Lu however fails to disclose a method of further comprising removing the reservation of shared resources along the restoration path responsive to an error message flag indicating that the restoration path could not be setup.

Graves discloses a method of further comprising removing the reservation of shared resources along the restoration path responsive to an error message flag indicating that the restoration path could not be setup. **(See Fig 6B and Column 16:43-58)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Allen's and Lu's method to incorporate a method of further comprising removing the reservation of shared resources along the restoration path responsive to an error message flag indicating that the restoration path could not be setup. The motivation is to make bandwidth that cannot be utilized available to other resources on demand as indicated in Graves Column 5:5-12.

6. Regarding **claim 17**, the combination of Allen and Lu discloses a method, further comprising: reserving the resources along the restoration path if and only if the label

switched path request comprises a shared reservation flag, the shared reservation flag indicative of whether other flags are needed to support restoration. **(This is strictly an implementation issue as it is already shown that LU teaches resources on the restoration path can be reserved ahead of time prior to establishing the restoration path in paragraph 104)**

7. Regarding **claim 18**, the combination of Allen and Lu discloses a method further comprising: allocating the shared resources along the restoration path responsive to a detected failure in the mesh network. **(See Lu paragraph 104)**

8. Regarding **claim 19**, the combination of Allen and Lu discloses a method wherein the label switched path request comprises a bit flag indicative of whether the label switched path is the service path or the restoration path. **(See Allen Paragraph 38)**

9. Regarding **claim 20**, the combination of Allen and Lu discloses a method wherein the label switched path request comprises a secondary bit indicative that the restoration path is a backup path for the service path. **(See Allen Paragraph 38)**

10. **Claims 6, 8, 10, and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns et al (US 6, 442, 132), hereinafter referred to as Burns, in view of Sasaki et al (US Pub. No. 2001/0036153), hereinafter referred to as Sasaki.

Burns teaches bridge-and-roll techniques on ATM virtual connections.

11. Regarding **claims 6 and 10**, Burns discloses a method of signaling in a telecommunication network comprising the steps of: sending a first message to the destination node requesting that the destination node bridge and roll the service path

and the restoration path (**See Column 4:1-3 and Column 3:13-23**) and if a second message is received from the destination node confirming that the destination node has bridged and rolled the service path and the restoration path, halting transmissions along the restoration path (**See Column 4:11-20**), the second message comprising an object that comprises a code. a first possible value of the code indicative that bridging has been completed second possible value of the code indicative that a roll/bridge has been completed, a third possible value of the code indicative that a roll has been completed. **(This is strictly an implementation issue since Burns teaches messages are exchanged between the source and the destination during a bridge-and-roll operation, which is identical to the steps described in Paragraph 47 of Applicant's specification)** Burns also inherently teaches sending a fourth message along the restoration path freeing resources reserved for the restoration path. (**See Column 4:18-19**)

Burns fails to teach sending a third message to the destination node confirming that the connection is normalized in a mesh telecommunication network. Burns also fails to disclose bridging a signal onto both a service path and a restoration path to a destination node in the mesh network, the signal bridged responsive to a request to normalize a restored connection.

Sasaki also teaches rerouting traffic to a secondary path after normalization.

Sasaki discloses sending a third message (**See Paragraph 196, ACK Bridge and Roll Message**) to the destination node confirming that the connection is normalized in a mesh telecommunication network (**See Paragraphs 6 and 90**). Sasaki also

Art Unit: 2616

discloses bridging a signal onto both a service path and a restoration path to a destination node in the mesh network (**See Paragraph 195**), the signal bridged responsive to a request to normalize a restored connection (**See Paragraph 193**)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Burn's method to include a "bridge and roll" method with the step of bridging a signal onto both a service path and a restoration path to a destination node in the mesh network, the signal bridged responsive to a request to normalize a restored connection and sending a third message to the destination node confirming that the connection is normalized in a mesh telecommunication network. The motivation being such method provides a non-disruptive service transfer into the Primary path as shown in Sasaki's paragraph 30.

12. Regarding **claims 8 and 12**, Burns fails to disclose a method of further comprising the step of verifying the service path prior to normalizing the connection.

Sasaki discloses a method of further comprising the step of verifying the service path prior to normalizing the connection. (**See Figure 14, steps A4, A5, and A6. See Paragraphs 159, 161, 191 and 192**)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Burn's method to include a step of verifying the service path prior to normalizing the connection. The motivation being to fully ensure that the primary working that has been repaired is fully operational before switching from the secondary path to the primary path as detailed by Sasaki in paragraph 82.

14. **Claims 7 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns in view of Sasaki as applied to claims 6 and 10 respectively above, and further in view of Kim et al (Byeongsik Kim, Woojik Chan, Janeho Yoo, "Constraint-based LSP setup message reversing of CR-LDP", Pages 875-880, IEEE, February 2, 2001), hereinafter referred to as Kim.

The combination of Burns and Sasaki fails to disclose a method, where in the messages are RSVP messages.

Kim discloses a method, where in the messages are RSVP messages. (See **Page 877, 1st Column, 3rd Paragraph**)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Burns' and Sasaki's method to incorporate a method wherein the messages are RSVP messages. The motivation being to keep the link state information kept in the database of each node up to date and to provide a means to inform each node a feedback to indicate if the path has been setup or not as RSVP messages has such capability.

15. **Claims 9 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns in view of Sasaki as applied to claims 6 and 12 respectively above, and further in view of Nagarajan et al (US 7, 099 327), hereinafter referred to as Nagarajan.

The combination of Burns and Sasaki fails to teach a method wherein the service path is verified using LMP.

Nagarajan teaches an Optical Transport Network.

Art Unit: 2616

Nagarajan discloses a method wherein the service path is verified using LMP
(See Column 3:63-67)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Burns' and Sasaki's method to incorporate a method based on LMP. The motivation being Link Management Protocol (LMP) is ideal and optimal for using it in Optical Networks to compute the optical path as illustrated in Nagarajan's Column 3:63-67.

Response to Arguments

16. Applicant's arguments with respect to independent claims 1, 6, and 10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Habte Mered whose telephone number is 571 272 6046. The examiner can normally be reached on Monday to Friday 9:30AM to 5:00PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on 571 272 3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

02-26-2007

HM


CHI PHAM
SUPERVISORY PATENT EXAMINER
2/28/07